

Application No.: 10/717,916

Docket No.: 20260-00079-US

REMARKS

Claims 1-16 are pending. Claims 1-9 are amended. Claim 10 is canceled. Claims 11-14 are withdrawn from consideration for being directed to a non-elected group. Claims 15 and 16 are new.

Claim Amendments

Claim 1 has been amended to more precisely claim applicant's invention. Support for the language added to claim 1 is provided in the specification, for example, on page 6, line 35 through page 9, line 7 and in FIG. 1. Claims 5 and 8 have been amended to overcome rejections under 35 U.S.C. §112. Claims 1-9 have also been amended to improve readability and clarity. No new matter has been added.

Claim Rejections - 35 U.S.C. §112

Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1-10 under 35 U.S.C. §112, first paragraph, as being non-enabled. Claim 10 has been canceled, and the rejection of claim 10 is therefore moot. The term "adjustable" previously modifying the open position of the passage, has been removed from the claims. Thus, claims 1-9 satisfy the requirements of the first paragraph of 35 U.S.C. §112.

Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 5-8 and 10 under 35 U.S.C. §112, second paragraph, as being indefinite.

Claim 10 has been canceled, and the rejection of claim 10 is therefore moot.

With respect to claim 5, the examiner stated that the scope of the language "connected to or comprises" is unclear. Applicant respectfully disagrees. Applicant respectfully submits that is clear that the expansion chamber in amended claim 5 may include a non-return valve assembly or may be connected to a non-return valve assembly. Such alternative language is not ambiguous.

Application No.: 10/717,916

Docket No.: 20260-00079-US

Regarding claim 8, the rejected terms "said open position" have been amended to read "said predetermined position."

In light of the above, claims 5-8 and 10 are definite under 35 U.S.C. §112, second paragraph.

Claim Rejections - 35 U.S.C. §102

Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1-4 under 35 U.S.C. §102(b) as being anticipated by Crouch (US Patent No. 259,634).

Claim 1, as amended herein, recites a gas-filled spring comprising:

a first means for transferring gas between said compression chamber and said expansion chamber, said first means comprising at least one passage which is arranged between the compression chamber and the expansion chamber and is open in only one predetermined position of the cylinder and the piston relative to one another, wherein, each time the piston passes said predetermined position during movement of the piston in the internal space, the at least one passage is thereby opened and permits at least one of the following: gas transfer between the compression chamber and the expansion chamber, pressure equalization in the compression chamber and the expansion chamber, and differential pressure adjustment of the gas pressures in the compression chamber and the expansion chamber;

a second means for loading the spring with gas and maintaining gas pressure in the spring; and

a third means for relieving air when gas pressure in the compression chamber or the expansion chamber rises over a predetermined value.

The device of Crouch does not include a second means for loading the spring with gas and maintaining gas pressure in the spring, or a third means for relieving air when gas pressure in the compression chamber or the expansion chamber rises over a predetermined value.

Application No.: 10/717,916

Docket No.: 20260-00079-US

Additionally, Crouch does not teach a passage which is arranged between the compression chamber and the expansion chamber and *is open in only one predetermined position of the cylinder and the piston relative to one another* (emphasis added). For at least these reasons, claims 1-4 are allowable over Crouch.

Claim Rejections - 35 U.S.C. §103

Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 5, 6, 8 and 9 under 35 U.S.C. §103(a) as being unpatentable over Crouch in view of Ingham (U.S. Patent No. 1,151,595).

Crouch fails to teach the spring recited in claim 1 for the reasons stated above. Ingham fails to disclose or suggest a means for loading the spring with gas and maintaining gas pressure in the spring. Ingham also fails to teach or suggest a passage which is arranged between the compression chamber and the expansion chamber and is open in only one predetermined position of the cylinder and the piston relative to one another. Therefore, claims 5-8 are allowable over the combination of Crouch and Ingham.

Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 7 under 35 U.S.C. §103(a) as being unpatentable over Crouch in view of Ingham, and further in view of Tsuchiya et al. (U.S. Patent No. 4,693,454).

Crouch and Ingham do not teach the invention of claim 6 for the reasons provided above. Tsuchiya et al. also fails to teach or suggest a passage which is arranged between the compression chamber and the expansion chamber and *is open in only one predetermined position of the cylinder and the piston relative to one another*. Therefore, the proposed combination of Crouch, Ingham and Tsuchiya et al. does not teach or suggest every element of claim 7. Claim 7 is therefore allowable.

New Claims

New claim 15 depends from claim 1 and is therefore allowable.

Application No.: 10/717,916

Docket No.: 20260-00079-US

New claim 16 recites:

A gas-filled spring for a vehicle, said gas-filled spring operating using gas, wherein said gas-filled spring comprises:

a cylinder;

at least one piston that operates therein and divides an internal space of the cylinder into a compression chamber and an expansion chamber; and

a self-pumping and self-balancing arrangement designed to ensure maintenance of necessary quantities of gas as well as gas pressure settings or differential pressures in the compression chamber and the expansion chamber in order to provide optimal spring function despite any gas leakage occurring and despite temperature variations occurring inside and outside the gas-filled spring, wherein the arrangement comprises:

a first means for transferring gas between said compression chamber and said expansion chamber, said first means comprising at least one passage which is arranged between the compression chamber and the expansion chamber and is open in a predetermined position of the cylinder and the piston relative to one another, wherein, each time the piston passes said predetermined position during movement of the piston in the internal space, the at least one passage is thereby opened and permits at least one of the following: gas transfer between the compression chamber and the expansion chamber, pressure equalization in the compression chamber and the expansion chamber, and differential pressure adjustment of gas pressures in the compression chamber and the expansion chamber;

a second means for loading the spring with gas and maintaining gas pressure in the spring; and

Application No.: 10/717,916

Docket No.: 20260-00079-US

a third means for relieving gas when gas pressure in the compression chamber or the expansion chamber rises over a predetermined value, wherein said third means is connected to said at least one passage, and wherein gas is relieved via said third means only when said piston passes said predetermined position.

Claim 16 is allowable over the cited prior art at least because the prior art fails to teach or suggest: at least one passage which is arranged between the compression chamber and the expansion chamber and is open in a predetermined position of the cylinder and the piston relative to one another; and a means for relieving gas that is connected to the passage, wherein gas is relieved via said third means only when said piston passes said predetermined position, as recited in claim 16.

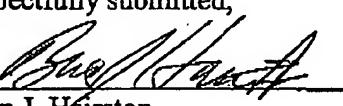
Conclusion

In view of the above amendment, applicant believes the pending application is in condition for allowance.

If a fee is due, please charge our Deposit Account No. 22-0185, under Order No. 20260-00079-US from which the undersigned is authorized to draw.

Dated: July 11, 2005

Respectfully submitted,

By 
Brian J. Hairston

Registration No.: 46,750
CONNOLLY BOVE LODGE & HUTZ LLP
1990 M Street, N.W., Suite 800
Washington, DC 20036-3425
(202) 331-7111
(202) 293-6229 (Fax)
Attorney for Applicant